

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1. (Currently Amended) A method for introducing a substance comprising a nucleic acid into a mammalian neural stem cell or progenitor cell, in vitro, wherein the substance gives a detectable signal or encodes a peptide or protein that enables selective identification of the cells, the method comprising (i) bringing the substance into contact with the cell, wherein step (i) is the only prerequisite for the uptake of the substance by the cell wherein said nucleic acid directly interacts with the cell membrane of said cell or a component within said cell membrane in vitro whereby the substance comprising said nucleic acid is taken up by the cell via the inherent transport mechanism of the cell.

Claim 2. (Currently Amended) A method according to claim 1, wherein said cell is obtained derived from an adult.

Claim 3. (Canceled) A method according to claim 2, wherein said method is performed in a humid atmosphere at 37°C.

Claim 4. (Currently Amended) A method according to claim 1 3, wherein said substance comprises a single or double stranded, linear or circular DNA.

Claim 5. (Canceled) A method according to claim 1, wherein said substance comprises a single or double stranded RNA.

Claim 6. (Canceled) A method according to claim 1, wherein said substance is a fusion molecule comprising a nucleic acid part and a protein part.

Claim 7. (Currently Amended) A method according to ~~any~~ claim 1, wherein said nucleic acid ~~substance~~ is an expression vector containing specific cDNA.

Claim 8. (Canceled) A method according to claim 7, wherein said cDNA gives rise to a peptide or protein that activate proliferation and/or differentiation and/or lineage determination of said cells.

Claim 9. (Canceled) A method according to claim 1, wherein said substance gives rise to a detectable signal.

Claim 10. (Canceled) A method according to claim 7, wherein cDNA gives rise to a peptide or protein that enables selective identification of stem cells and/or progenitor cells.

Claim 11. (Canceled) A method according to claim 10, wherein said peptide or protein gives rise to a detectable signal.

Claim 12. (Currently Amended) A method according to claim 1 ~~44~~, wherein said protein is a fluorescent protein.

Claim 13. (Currently Amended) A method according to claim 1 ~~44~~, wherein said detectable signal is due to a radioactively tagged nucleic acid.

Claim 14. (Previously Presented) A method according to claim 1, wherein said cell is a cell in a tissue or cell culture.

Claim 15. (Canceled) A method for identification of progenitor cells and/or stem cells comprising using the method according to claim 1.

Claim 16. (Canceled) The method according to claim 15, wherein said cells after identification are isolated from surrounding cells of other types.

Claim 17. (Canceled) A method for gene therapy comprising using the method according to claim 1.

Claim 18. (Canceled) The method according to claim 6, wherein said protein part comprises a pharmaceutically active protein.

Claim 19. (Canceled) A method for propagation of neural cells comprising using the method according to claim 8.

Claim 20. (Canceled) The method according to claim 18, wherein said propagated neural cells are suitable for transplantation to patients.

Claim 21. (Canceled) A method for detection of a medicinal product comprising cDNA containing expression plasmids comprising using the method according to claim 1.

Claim 22. (Canceled) A method for diagnostic purposes comprising using the method according to claim 1.

Claim 23. (Currently Amended) The method according to claim 7 8, wherein said protein or detectable signal is used for ~~allows~~ for testing or screening of aforementioned protein or signal.

Claim 24. (Canceled) A method for introducing a substance comprising a nucleic acid into a mammalian neural stem cell or progenitor cell, wherein said nucleic acid directly interacts with the cell membrane of said cell or a component within said cell membrane in vivo, whereby the substance comprising said nucleic acid is taken up by the cell via the inherent transport mechanism of the cell.

Claim 25. (Canceled) A method according to claim 4, wherein said cell is derived from an adult.

Claim 26. (Canceled) A method according to claim 24, wherein said substance comprises a single or double stranded, linear or circular DNA.

Claim 27. (Canceled) A method according to claim 24, wherein said substance comprises a single or double stranded RNA.

Claim 28. (Canceled) A method according to claim 24, wherein said substance is a fusion molecule comprising a nucleic acid part and a protein part.

Claim 29. (Canceled) A method according to claim 24, wherein said substance is an expression vector containing a specific cDNA.

Claim 30. (Canceled) A method according to claim 29, wherein said cDNA gives rise to a peptide or protein that activate proliferation and/or differentiation and/or lineage determination of said cells.

Claim 31. (Canceled) A method according to claim 24, wherein said substance gives rise to a detectable signal.

Claim 32. (Canceled) A method according to claim 29, wherein said cDNA gives rise to a peptide or protein that enables selective identification of stem cells and/or progenitor cells.

Claim 33. (Canceled) A method according to claim 32, wherein said peptide or protein gives rise to a detectable signal.

Claim 34. (Canceled) A method according to claim 33, wherein said protein is a fluorescent protein.

Claim 35. (Canceled) A method according to claim 33, wherein said detectable signal is due to a radioactively tagged nucleic acid.

Claim 36. (Canceled) A method according to claim 1, wherein said cell is a cell in the central nervous system of a patient.

Claim 37. (Canceled) A method for identification of progenitor cells and/or stem cells comprising using the method according to claim 24.

Claim 38. (Canceled) The method according to claim 37, wherein said cells after identification are isolated from surrounding cells of other types.

Claim 39. (Canceled) A method for gene therapy comprising using the method according to claim 24.

Claim 40. (Canceled) A method according to claim 28, wherein said protein part comprises a pharmaceutically active protein.

Claim 41. (Canceled) A method for propagation of neural cells comprising using the method according to claim 30.

Claim 42. (Canceled) A method for detection of a medicinal product comprising cDNA containing expression plasmids comprising using the method according to claim 24.

Claim 43. (Canceled) A method for diagnostic purposes comprising using the method according to claim 24.

Claim 44. (Canceled) A method claim 35, wherein said protein or detectable signal allows for testing or screening of aforementioned protein or signal.

Claim 45. (Canceled) A method for treatment of neurological insult, disease, deficit or condition comprising using the method according to claim 24.

Claim 46. (New) The method according to claim 1, wherein the substance is brought into contact with the cell without the use of facilitating drugs, carriers, soluble receptors, chemicals or any special devices that facilitate uptake or transport of DNA.

Claim 47. (New) The method according to claim 1, wherein the cell has not been modified to facilitate uptake of DNA.

Claim 48. (New) The method according to claim 1, wherein the peptide or protein is a marker peptide or protein.

Claim 49. (New) The method according to claim 1, wherein the protein is GFP.